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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/772,223	02/03/2004	Kenji Ishii	9683/165	2202
79510	7590	04/09/2010	EXAMINER	
NTT DoCoMo Inc/BHGL P.O. Box 10395 Chicago, IL 60610			BATURAY, ALICIA	
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/772,223

Applicant(s)

ISHII ET AL.

Examiner

Alicia Baturay

Art Unit

2446

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 20 January 2010.
2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 29-34 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5) ☐ Claim(s) _____ is/are allowed.
6) ☒ Claim(s) 29-34 is/are rejected.
7) ☐ Claim(s) _____ is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
10) ☒ The drawing(s) filed on 03 February 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/5508)
Paper No(s)/Mail Date _____

- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____

DETAILED ACTION

1. This Office Action is in response to a request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), which was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 20 January 2010 has been entered.
2. Claims 1-28 were cancelled.
3. Claims 29-34 were added.
4. Claims 29-34 are pending in this Office Action.

Response to Amendment

5. The rejections of claims 1, 23 and 28 under 35 U.S.C. § 112, 2nd paragraph regarding indefiniteness are moot due to cancellation of aforementioned claims.

Response to Arguments

6. ***Applicant Argues:*** Nguyen fails to describe the features of claim 29 of “a control unit configured to determine whether transmission of the instruction of relocation to the function relocation unit is necessary and whether transmission of the instruction of restructuring to the path restructure unit is necessary.”

In Response: The examiner respectfully submits that the combination of Nguyen and Vange teaches a control unit configured to determine whether transmission of the instruction of relocation to the function relocation unit is necessary (if one or more congestion events are detected, Data Collection 220 records such detections in Data Store 250. Following such detection, a messaging step 450 is performed which sends an activation message to Analysis Engine 230 via Communication Bus 210) and whether transmission of the instruction of restructuring to the path restructure unit is necessary (Following this step a step of messaging to Configuration Engine 560 is performed – see Nguyen, page 4, paragraph 85 - page 5, paragraph 122). This renders the rejection proper, and thus the rejection stands.

7. ***Applicant Argues:*** Nguyen also fails to describe the features of claim 29 of “a function relocation unit configured...to determine new node locations of node functions, and to relocate the node functions to the new node locations through an addition of executable code at the new node locations.”

In Response: The examiner respectfully submits that the combination of Nguyen and Vange teaches a function relocation unit configured...to determine new node locations of node functions (Assume there are three (3) demands 1, 2, 3820a-c, between Node A 810a and Node 810e. Also assume that these demands are being routed as follows: Before Reroute: Demand 1 uses path A-C-E; Demand 2 uses path A-C-D-E; Demand 3 uses path A-B-D-E. Suppose that there is congestion on arc AC 830ac. Now let us assume that the routing

solution is determine[d] to be as follows: Demand 1 uses path A-C-E; Demand 2 uses path A-B-D-E; Demand 3 uses path A-B-C-D-E), and to relocate the node functions to the new node locations (Configuration Process 260 makes the changes to the elements in Network 100, to affect the routing of various demands in Network 100 – see Nguyen, page 4, paragraph 85 – page 5, paragraph 122). Nguyen does not explicitly teach an addition of executable code at the new node locations. However, Vange teaches through an addition of executable code at the new node locations (Hence, when quality of service drops because of a large number of client accesses to a particular data server 210-212, an additional front-end 201 and/or intermediary server 206 can be assigned to the data server 21—212 and subsequent client requests directed to the newly assigned computer to distribute traffic across a broader base – see Vange, page 4, paragraph 45). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Nguyen in view of Vange in order to enable an addition of executable code at the new node locations. One would be motivated to do so in order to readily scale upwardly and downwardly to meet the needs of a particular application (Vange, page 2, paragraph 23). This renders the rejection proper, and thus the rejection stands.

8. *Applicant Argues:* In addition, Nguyen fails to describe the features of claim 29 of “the path restructure unit is configured to determine a restructuring plan for the structure of the paths based on an exchange of data on a draft relocation plan of the node functions and data

on a draft restructuring plan of the structure of the paths, the exchange of data being between the function relocation unit and the path restructure unit."

In Response: The examiner respectfully submits that the combination of Nguyen and Vange teaches the path restructure unit is configured to determine a restructuring plan for the structure of the paths (Analysis Engine 230 retrieves data necessary for analysis from the Data Store 250. The retrieved data is used in the next step 540 of problem formulations. This entails the formulation of the routing optimization problem. The next step is the step of problem solving 550 which formulates an optimized routing solution) based on an exchange of data on a draft relocation plan of the node functions (Network 100 may create Reroute 70 to reroute some or all Traffic 40 to avoid Node 620f to Node 12201. This would change the route of Demand 130a from the route discussed prior [Node 020o to Node 320c to Node 520e to Node 620f to Node 820h to Node 1120k to Node T 20t] to: Node 020o to Node 320c to Node 520e to Node 12201 to Node 820h to Node 1120k to Node T 20t) and data on a draft restructuring plan of the structure of the paths (Assume there are three (3) demands 1, 2, 3820a-c, between Node A 810a and Node 810e. Also assume that these demands are being routed as follows: Before Reroute: Demand 1 uses path A-C-E; Demand 2 uses path A-C-D-E; Demand 3 uses path A-B-D-E. Suppose that there is congestion on arc AC 830ac. Now let us assume that the routing solution is determine[d] to be as follows: Demand 1 uses path A-C-E; Demand 2 uses path A-B-D-E; Demand 3 uses path A-B-C-D-E – see Nguyen, page 3, paragraphs 57-72 and Nguyen, page 5, paragraphs 107-122), the exchange of data being between the function relocation unit and the path restructure unit (if one or more congestion

events are detected, Data Collection 220 records such detections in Data Store 250. Following such detection, a messaging step 450 is performed which sends an activation message to Analysis Engine 230 via Communication Bus 210. Following this step a step of messaging to Configuration Engine 560 is performed – see Nguyen, page 4, paragraph 85 - page 5, paragraph 122). This renders the rejection proper, and thus the rejection stands.

9. ***Applicant Argues:*** Thus, Vange teaches away from simply rerouting traffic around points of congestion as described in Nguyen.

In Response: The examiner respectfully submits that in this case, it has been shown that Nguyen is directed to a method and system of providing for central control and intelligent routing of data network traffic where a server is operatively connected to a network and is capable of receiving information regarding network status, specifically capable of recognizing network congestion, formulating a solution to the network congestion and re-configure network traffic to reroute around network congestion (see Nguyen, Abstract). In analogous art, Vange is drawn to a system where additional front-end and/or intermediary servers can be assigned to the data server and subsequent client requests directed to the newly assigned computer to distribute traffic across a broader base when quality of service drops because of a large number of client accesses to a particular data server (see Vange, page 4, paragraph 45).

Additionally, the motivation to combine Nguyen and Vange was given in the rejection as

“to readily scale upwardly and downwardly to meet the needs of a particular application (Vange, page 2, paragraph 23).”

Moreover, the KSR decision supports the rationale that all the claimed elements were known in the prior art and one skilled in the art could have combined the elements as claimed by known methods with no change in their respective functions, and the combination would have yielded predictable results to one of ordinary skill in the art at the time of the invention. Nguyen was used as the primary reference, which is seen as disclosing all of the claimed subject matter except for that detailing the execution of code at the new node locations. However, the execution of code limitation is covered by Vange. So all of the component parts of the claim are known in Nguyen and Vange. Thus, it would have been obvious to one having ordinary skill in the art to use the execution of code procedure taught by Vange with the system of providing intelligent routing discussed in the Nguyen reference, since a procedure executing code could be used in combination with an intelligent routing system to achieve the predictable results of dynamically providing improved quality of service for a customer over a congested network by rerouting the network traffic.

Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of Nguyen and Vange. This renders the rejection proper, and thus the rejection stands.

Claim Rejections - 35 USC § 103

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

11. Claims 29-32 and 34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nguyen (U.S. 2003/0046426) and further in view of Vange (U.S. 2002/0002603).

Nguyen teaches the invention substantially as claimed including a method and system of providing for central control and intelligent routing of data network traffic where a server is operatively connected to a network and is capable of receiving information regarding network status, specifically capable of recognizing network congestion, formulating a solution to the network congestion and re-configure network traffic to reroute around network congestion (see Abstract).

12. With respect to claim 29, Nguyen teaches a network structure controlling device comprising: a memory; and a processor in communication with the memory, the memory comprising computer executable instructions, the computer executable instructions executable with the processor (Nguyen, page 2, paragraphs 43 and 46) and comprising: a function relocation unit configured to analyze, in response to an instruction of relocation, a current available node resource based on statutes of node resources in a network, to

determine new node locations of node functions, and to relocate the node functions to the new node locations (Nguyen, page 4, paragraph 85 – page 5, paragraph 122), the node functions relocated in accordance with a relocation plan (Nguyen, page 3, paragraphs 63-72); a path restructure unit configured to restructure a structure of paths in the network into an optimum condition in accordance with statuses of link resources in the network (Nguyen, page 4, paragraphs 84 and 85) and in response to an instruction of restructuring (Nguyen, page 5, paragraph 123 – page 6, paragraph 124), wherein the path restructure unit is configured to determine a restructuring plan for the structure of the paths based on an exchange of data on a draft relocation plan of the node functions and data on a draft restructuring plan of the structure of the paths (Nguyen, page 3, paragraphs 57-72 and Nguyen, page 5, paragraphs 107-122), the exchange of data being between the function relocation unit and the path restructure unit (Nguyen, page 4, paragraph 85 - page 5, paragraph 122); and a control unit configured to determine whether transmission of the instruction of relocation to the function relocation unit is necessary and whether transmission of the instruction of restructuring to the path restructure unit is necessary (Nguyen, page 4, paragraph 85 – page 5, paragraph 122) based on the statuses of node resources and the statuses of link resources (Nguyen, page 3, paragraphs 63-72), wherein the control unit is further configured to selectively transmit the instruction of relocation and the instruction of restructuring (Nguyen, page 5, paragraphs 88-122).

Nguyen does not explicitly teach an addition of executable code at the new node locations.

However, Vange teaches through an addition of executable code at the new node locations (Vange, page 4, paragraph 45).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Nguyen in view of Vange in order to enable an addition of executable code at the new node locations. One would be motivated to do so in order to readily scale upwardly and downwardly to meet the needs of a particular application (Vange, page 2, paragraph 23).

13. With respect to claim 30, Nguyen teaches the invention described in claim 29, including the network structure controlling device wherein the node functions include a node function, the node resources include node resources at a first device and a second device in the network, relocation of the node functions to the new node locations includes a relocation of the node function from the first device to the second device, and the function relocation unit is configured to determine the first device and the second device (Nguyen, page 5, paragraphs 88-122).
14. With respect to claim 31, Nguyen teaches the invention described in claim 30, including the network structure controlling device wherein the control unit is configured to: transmit the instruction of relocation in response to a determination that a relocation of the node function from first device to the second device is necessary; and transmit the instruction of restructuring in response to a determination that a reconfiguration of a communication path formed in the network is necessary (Nguyen, page 3, paragraphs 63-72).

15. With respect to claim 32, Nguyen teaches the invention described in claim 30, including the network structure controlling device wherein the function relocation unit is configured to generate a provisional determination of the first device and the second device, the draft relocation plan of the node functions comprising the provisional determination of the first device and the second device; and the path restructure unit is configured to generate a final determination of the new communication path based on the provisional determination of the first device and the second device, the restructuring plan of the structure of the paths comprising the final determination of the new communication path (Nguyen, page 3, paragraphs 63-72).
16. With respect to claim 34, Nguyen teaches the invention described in claim 30, including a network structure controlling device comprising: a memory; and a processor in communication with the memory, the memory comprising computer executable instructions, the computer executable instructions executable with the processor (Nguyen, page 2, paragraphs 43 and 46) and comprising: a function relocation unit configured to analyze, in response to an instruction of relocation, a current available node resource based on statuses of node resources in a network, to determine new node locations of node functions, and to relocate the node functions to the new node locations (Nguyen, page 4, paragraph 85 – page 5, paragraph 122), the node functions relocated in accordance with a relocation plan (Nguyen, page 3, paragraphs 63-72); a path restructure unit configured to restructure a structure of paths in the network into an optimum condition in accordance with statuses of link resources in the network (Nguyen, page 4, paragraphs 84 and 85) and in response to an

instruction of restructuring (Nguyen, page 5, paragraph 123 – page 6, paragraph 124), wherein the path restructure unit is configured to determine a restructuring plan for the structure of the paths based on an exchange of data on a draft relocation plan of the node functions and data on a draft restructuring plan of the structure of the paths (Nguyen, page 3, paragraphs 63-72), the exchange of data being between the function relocation unit and the path restructure unit (Nguyen, page 5, paragraphs 107-122); and a control unit configured to determine whether transmission of the instruction of relocation to the function relocation unit is necessary and whether transmission of the instruction of restructuring to the path restructure unit is necessary (Nguyen, page 5, paragraphs 107-122) based on the statutes of node resources and the statutes of link resources (Nguyen, page 3, paragraphs 63-72), wherein the control unit is further configured to selectively transmit the instruction of relocation and the instruction of restructuring (Nguyen, page 5, paragraphs 88-122).

Nguyen does not explicitly teach an addition of executable code at the new node locations.

However, Vange teaches through an addition of executable code at the new node locations (Vange, page 4, paragraph 45) and the network structure controlling device wherein the node function comprises at least one of a firewall function, a mobility control function, a call control function, a data copy function, a multicast function, a mobile anchor function, or a mobile buffering function (Vange, pages 4-5, paragraphs 45-47).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Nguyen in view of Vange in order to enable an addition of executable code at the new node locations. One would be motivated to do so in order to readily scale

upwardly and downwardly to meet the needs of a particular application (Vange, page 2, paragraph 23).

17. Claim 33 is rejected under 35 U.S.C. 103(a) as being unpatentable over Nguyen in view of Vange and further in view of Weinert et al. (U.S. 7,454,516).
18. With respect to claim 33, Nguyen teaches the invention described in claim 30, including a network structure controlling device comprising: a memory; and a processor in communication with the memory, the memory comprising computer executable instructions, the computer executable instructions executable with the processor (Nguyen, page 2, paragraphs 43 and 46) and comprising: a function relocation unit configured to analyze, in response to an instruction of relocation, a current available node resource based on statuses of node resources in a network, to determine new node locations of node functions, and to relocate the node functions to the new node locations (Nguyen, page 4, paragraph 85 – page 5, paragraph 122), the node functions relocated in accordance with a relocation plan (Nguyen, page 3, paragraphs 63-72); a path restructure unit configured to restructure a structure of paths in the network into an optimum condition in accordance with statuses of link resources in the network (Nguyen, page 4, paragraphs 84 and 85) and in response to an instruction of restructuring (Nguyen, page 5, paragraph 123 – page 6, paragraph 124), wherein the path restructure unit is configured to determine a restructuring plan for the structure of the paths based on an exchange of data on a draft relocation plan of the node

functions and data on a draft restructuring plan of the structure of the paths (Nguyen, page 3, paragraphs 63-72), the exchange of data being between the function relocation unit and the path restructure unit (Nguyen, page 5, paragraphs 107-122); and a control unit configured to determine whether transmission of the instruction of relocation to the function relocation unit is necessary and whether transmission of the instruction of restructuring to the path restructure unit is necessary (Nguyen, page 5, paragraphs 107-122) based on the statuses of node resources and the statuses of link resources (Nguyen, page 3, paragraphs 63-72), wherein the control unit is further configured to selectively transmit the instruction of relocation and the instruction of restructuring (Nguyen, page 5, paragraphs 88-122).

Nguyen does not explicitly teach an addition of executable code at the new node locations.

However, Vange teaches through an addition of executable code at the new node locations (Vange, page 4, paragraph 45).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Nguyen in view of Vange in order to enable an addition of executable code at the new node locations. One would be motivated to do so in order to readily scale upwardly and downwardly to meet the needs of a particular application (Vange, page 2, paragraph 23).

The combination of Nguyen and Vange does not explicitly teach preventing a node resource and a link resource of the first device and the second device from being controlled by another network structure controlling device.

However, Weinert teaches the network structure controlling device further comprising an exclusive control unit configured to prevent a node resource and a link resource of the first device and the second device from being controlled by another network structure controlling device in the network (Weinert, col. 12, line 65 – col. 13, line 3) in response to a determination by the control unit that relocation of the node function of the first device in the network is necessary (Weinert, col. 10, line 62 – col. 11, line 2).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the combination of Nguyen and Vange in view of Weinert in order to enable preventing a node resource and a link resource of the first device and the second device from being controlled by another network structure controlling device. One would be motivated to do so in order to attempt to avoid overload of any single machine by directing only a percentage of the incoming requests for web pages to any one content server (Weinert, col. 2, lines 6-9).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Alicia Baturay whose telephone number is (571) 272-3981. The examiner can normally be reached at 7:30am - 5pm, Monday - Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jeffrey Pwu can be reached on (571) 272-6798. The fax number for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Alicia Baturay/
Examiner, Art Unit 2446

April 9, 2010

/Benjamin R Bruckart/
Primary Examiner, Art Unit 2446